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NEWS 6 Jul 15 VADEMECUM Updated
NEWS 7 Jul 15 Effect of Japanese Law Changes on Coverage of JP-B
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=> s ultraspiracle
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Some commands only work in certain files. For example, the EXPAND
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=> file medline biosis scisearch
COST IN U.S. DOLLARS

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SINCE FILE	TOTAL
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FILE 'MEDLINE' ENTERED AT 11:33:36 ON 16 JUL 96

FILE 'BIOSIS' ENTERED AT 11:33:36 ON 16 JUL 96
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FILE 'SCISEARCH' ENTERED AT 11:33:36 ON 16 JUL 96
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=> s ultraspiracle

L1 17 FILE MEDLINE
L2 36 FILE BIOSIS
L3 32 FILE SCISEARCH

TOTAL FOR ALL FILES

L4 85 ULTRASPIRACLE

=> dup rem l4

PROCESSING COMPLETED FOR L4

L5 49 DUP REM L4 (36 DUPLICATES REMOVED)

=> d ti 1-49

L5 ANSWER 1 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
TI MOLECULAR-CLONING OF AN ECDYSONE RECEPTOR (B1 ISOFORM) HOMOLOG FROM
THE SILKWORM, BOMBYX-MORI, AND ITS MESSENGER-RNA EXPRESSION DURING
WING DISC DEVELOPMENT

L5 ANSWER 2 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
TI EXPRESSION OF THE GENES ENCODING THE ECDYSTEROID AND RETINOID
RECEPTORS IN REGENERATING LIMB TISSUES FROM THE FIDDLER-CRAB, UCA
PUGILATOR

L5 ANSWER 3 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
TI BOMBYX ECR (BMECR) AND BOMBYX USP (BMCf1) COMBINE TO FORM A
FUNCTIONAL ECDYSONE RECEPTOR

L5 ANSWER 4 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
TI ISOLATION, REGULATION, AND DNA-BINDING PROPERTIES OF 3 DROSOPHILA
NUCLEAR HORMONE-RECEPTOR SUPERFAMILY MEMBERS

L5 ANSWER 5 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 1
TI Identification and characterization of a Drosophila nuclear receptor
with the ability to inhibit the ecdysone response.

L5 ANSWER 6 OF 49 MEDLINE DUPLICATE 2
TI Drosophila hormone receptor 38: a second partner for Drosophila USP
suggests an unexpected role for nuclear receptors of the nerve
growth factor-induced protein B type.

L5 ANSWER 7 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
TI MULTIMERIC COMPLEXES OF THE PML RETINOIC ACID RECEPTOR-ALPHA FUSION
PROTEIN IN ACUTE PROMYELOCYTIC LEUKEMIA-CELLS AND INTERFERENCE WITH
RETINOID AND PEROXISOME-PROLIFERATOR SIGNALING PATHWAYS

L5 ANSWER 8 OF 49 MEDLINE DUPLICATE 3
TI Seven-up inhibits **ultraspiracle**-based signaling pathways

in vitro and in vivo.

- L5 ANSWER 9 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
TI SEQUENTIAL GENE ACTIVATION BY ECDYSONE IN DROSOPHILA-MELANOGASTER -
THE HIERARCHICAL EQUIVALENCE OF EARLY AND EARLY-LATE GENES
- L5 ANSWER 10 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
TI FROM EMBRYOGENESIS TO METAMORPHOSIS - THE REGULATION AND FUNCTION OF
DROSOPHILA NUCLEAR RECEPTOR SUPERFAMILY MEMBERS
- L5 ANSWER 11 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
TI IDENTIFICATION OF A NUCLEAR RECEPTOR THAT IS ACTIVATED BY FARNESOL
METABOLITES
- L5 ANSWER 12 OF 49 MEDLINE DUPLICATE 4
TI Characterization of an EcR/USP heterodimer target site that mediates
ecdysone responsiveness of the Drosophila Lsp-2 gene.
- L5 ANSWER 13 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
TI Regulation of origin activity during DNA amplification in Sciara
coprophila DNA puff II-9A.
- L5 ANSWER 14 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 5
TI Cloning and development expression of the ecdysone receptor gene from
the spruce budworm, Choristoneura fumiferana.
- L5 ANSWER 15 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
TI The Expression of **ultraspiracle** Gene Product during
Development of Drosophila melanogaster.
- L5 ANSWER 16 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
TI Isolation of ECR and RXR sequences from the ixodid tick, Amblyomma
americanum using RT-PCR.
- L5 ANSWER 17 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 6
TI Cloning and characterization of mosquito **Ultraspiracle**
(USP), the heterodimer partner of ecdysteroid receptor (EcR).
- L5 ANSWER 18 OF 49 MEDLINE DUPLICATE 7
TI Immunological studies on the developmental and chromosomal
distribution of ecdysteroid receptor protein in Chironomus tentans.
- L5 ANSWER 19 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
TI THE CONTROL OF APOPTOSIS IN DROSOPHILA
- L5 ANSWER 20 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
TI DNA binding of the ecdysteroid receptor-**ultraspiracle**
heterodimer to natural and synthetic ecdysteroid-response elements.
- L5 ANSWER 21 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
TI THE MOLTING HORMONE ECDYSONE IS ABLE TO RECOGNIZE TARGET ELEMENTS

COMPOSED OF DIRECT REPEATS

- L5 ANSWER 22 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
TI Steroid receptors and other transcription factors in ecdysone response.
- L5 ANSWER 23 OF 49 MEDLINE DUPLICATE 8
TI The ecdysone response enhancer of the Fbp1 gene of Drosophila melanogaster is a direct target for the Ecr/USP nuclear receptor.
- L5 ANSWER 24 OF 49 MEDLINE DUPLICATE 9
TI BmCF1, a Bombyx mori RXR-type receptor related to the Drosophila **ultraspiracle**.
- L5 ANSWER 25 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
TI Mosaic analysis of **Ultraspiracle**, a Drosophila RXR homolog, suggests multiple roles in imaginal disc development.
- L5 ANSWER 26 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
TI The functional and pharmacological ecdysone receptor is the product of ECR and **ultraspiracle**.
- L5 ANSWER 27 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
TI Enhanced nuclear translocation of the ecdysteroid receptor (Ecr) in vertebrate cells is mediated by interaction with **ultraspiracle** (USP).
- L5 ANSWER 28 OF 49 MEDLINE DUPLICATE 10
TI Expression and function of the **ultraspiracle** (usp) gene during development of Drosophila melanogaster.
- L5 ANSWER 29 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
TI **Ultraspiracle** (USP) mediates enhanced nuclear translocation of the ecdysteroid receptor (Ecr) in vertebrate cells.
- L5 ANSWER 30 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
TI DNA-binding studies using bacterially expressed ecdysteroid receptor and **ultraspiracle** from Chironomus tentans and Drosophila melanogaster.
- L5 ANSWER 31 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
TI ANTIBODY DETECTION OF PROTEIN COMPLEXES BOUND TO DNA.
- L5 ANSWER 32 OF 49 MEDLINE DUPLICATE 11
TI Binding affinity of the Drosophila melanogaster CF1/USP protein to the chorion s15 promoter.
- L5 ANSWER 33 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 12
TI **Ultraspiracle** and the ecdysone receptor: Relations among the nuclear receptor family from Drosophila to mammals.

L5 ANSWER 34 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 13
 TI THE DROSOPHILA RETINOID X RECEPTOR HOMOLOG **ULTRASPIRACLE**
 REGULATES ECDYSONE RECEPTOR FUNCTION.

L5 ANSWER 35 OF 49 MEDLINE DUPLICATE 14
 TI Functional ecdysone receptor is the product of EcR and
Ultraspiracle genes.

L5 ANSWER 36 OF 49 MEDLINE DUPLICATE 15
 TI Heterodimerization of the Drosophila ecdysone receptor with retinoid
 X receptor and **ultraspiracle**.

L5 ANSWER 37 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
 TI THE DROSOPHILA RETINOID-X RECEPTOR HOMOLOG **ULTRASPIRACLE**
 REGULATES ECDYSONE RECEPTOR FUNCTION

L5 ANSWER 38 OF 49 MEDLINE DUPLICATE 16
 TI Hormone receptors and the regulation of insect metamorphosis.

L5 ANSWER 39 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 17
 TI DROSOPHILA **ULTRASPIRACLE** MODULATES ECDYSONE RESPONSE VIA
 HETERODIMER FORMATION.

L5 ANSWER 40 OF 49 MEDLINE DUPLICATE 18
 TI DNA binding and heteromerization of the Drosophila transcription
 factor chorion factor 1/**ultraspiracle**.

L5 ANSWER 41 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
 TI STEROID RECEPTORS SWITCHING PARTNERS?.

L5 ANSWER 42 OF 49 MEDLINE DUPLICATE 19
 TI The Drosophila retinoid X receptor homolog **ultraspiracle**
 functions in both female reproduction and eye morphogenesis.

L5 ANSWER 43 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
 TI DNA BINDING PROPERTIES OF **ULTRASPIRACLE** THE DROSOPHILA
 RETINOID X RECEPTOR HOMOLOGUE.

L5 ANSWER 44 OF 49 MEDLINE DUPLICATE 20
 TI Drosophila **ultraspiracle** modulates ecdysone receptor
 function via heterodimer formation.

L5 ANSWER 45 OF 49 MEDLINE DUPLICATE 21
 TI Retinoids and their receptors in differentiation, embryogenesis, and
 neoplasia.

L5 ANSWER 46 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
 TI RETINOIDS AND THEIR RECEPTORS IN DIFFERENTIATION, EMBRYOGENESIS, AND
 NEOPLASIA

L5 ANSWER 47 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS

TI RELATIONSHIP BETWEEN THE DROSOPHILA **ULTRASPIRACLE** LOCUS AND
THE VERTEBRATE RETINOID X RECEPTOR.

L5 ANSWER 48 OF 49 MEDLINE DUPLICATE 22

TI Relationship between the product of the Drosophila
ultraspiracle locus and the vertebrate retinoid X receptor.

L5 ANSWER 49 OF 49 MEDLINE DUPLICATE 23

TI Developmental genetics of the 2C-D region of the Drosophila X
chromosome.

=>

=>

Executing the logoff script...

=> LOG H

COST IN U.S. DOLLARS

SINCE FILE

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FULL ESTIMATED COST

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FILE 'MEDLINE' ENTERED AT 11:45:22 ON 16 JUL 96

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=> d 1-6 8-10 12 14-17 20-23 25-27 29 33-35 37 39 40 43 44 47 48

L5 ANSWER 1 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)

AN 96:279565 SCISEARCH

GA The Genuine Article (R) Number: UD428

TI MOLECULAR-CLONING OF AN ECDYSONE RECEPTOR (B1 ISOFORM) HOMOLOG FROM
THE SILKWORM, BOMBYX-MORI, AND ITS MESSENGER-RNA EXPRESSION DURING
WING DISC DEVELOPMENT

AU KAMIMURA M; TOMITA S; FUJIWARA H (Reprint)
 CS UNIV TOKYO, GRAD SCH SCI, INST ZOOL, BUNKYO KU, TOKYO 113, JAPAN
 (Reprint); UNIV TOKYO, GRAD SCH SCI, INST ZOOL, BUNKYO KU, TOKYO
 113, JAPAN; NATL INST SERICULTURAL & ENTOMOL SCI, TSUKUBA, IBARAKI
 305, JAPAN
 CYA JAPAN
 SO COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY B-BIOCHEMISTRY & MOLECULAR
 BIOLOGY, (FEB 1996) Vol. 113, No. 2, pp. 341-347.
 ISSN: 0305-0491.
 DT Article; Journal
 FS LIFE
 LA ENGLISH
 REC Reference Count: 30
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L5 ANSWER 2 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
 AN 96:472230 SCISEARCH
 GA The Genuine Article (R) Number: UR518
 TI EXPRESSION OF THE GENES ENCODING THE ECDYSTEROID AND RETINOID
 RECEPTORS IN REGENERATING LIMB TISSUES FROM THE FIDDLER-CRAB, UCA
 PUGILATOR
 AU DURICA D S (Reprint); HOPKINS P M
 CS UNIV OKLAHOMA, DEPT ZOOL, 730 VAN VLEET OVAL, NORMAN, OK, 73019
 (Reprint)
 CYA USA
 SO GENE, (01 JUN 1996) Vol. 171, No. 2, pp. 237-241.
 ISSN: 0378-1119.
 DT Article; Journal
 FS LIFE
 LA ENGLISH
 REC Reference Count: 24
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L5 ANSWER 3 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
 AN 96:265880 SCISEARCH
 GA The Genuine Article (R) Number: UC345
 TI BOMBYX ECR (BMECR) AND BOMBYX USP (BMCF1) COMBINE TO FORM A
 FUNCTIONAL ECDYSONE RECEPTOR
 AU SWEVERS L; CHERBAS L; CHERBAS P; IATROU K (Reprint)
 CS UNIV CALGARY, DEPT MED BIOCHEM, 3330 HOSP DR NW, CALGARY, AB T2N
 4N1, CANADA (Reprint); UNIV CALGARY, DEPT MED BIOCHEM, CALGARY, AB
 T2N 4N1, CANADA; INDIANA UNIV, DEPT BIOL, BLOOMINGTON, IN, 47405
 CYA CANADA; USA
 SO INSECT BIOCHEMISTRY AND MOLECULAR BIOLOGY, (MAR 1996) Vol. 26, No.
 3, pp. 217-221.
 ISSN: 0965-1748.
 DT Article; Journal
 FS LIFE; AGRI
 LA ENGLISH
 REC Reference Count: 19
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L5 ANSWER 4 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
 AN 95:779181 SCISEARCH
 GA The Genuine Article (R) Number: TD890
 TI ISOLATION, REGULATION, AND DNA-BINDING PROPERTIES OF 3 DROSOPHILA
 NUCLEAR HORMONE-RECEPTOR SUPERFAMILY MEMBERS
 AU FISK G J (Reprint); THUMMEL C S
 CS UNIV UTAH, HOWARD HUGHES MED INST, ECCLES INST HUMAN GENET 5200,
 SALT LAKE CITY, UT, 84112 (Reprint); UNIV UTAH, DEPT HUMAN GENET,
 ECCLES INST HUMAN GENET 5200, SALT LAKE CITY, UT, 84112
 CYA USA
 SO PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES
 OF AMERICA, (07 NOV 1995) Vol. 92, No. 23, pp. 10604-10608.
 ISSN: 0027-8424.
 DT Article; Journal
 FS LIFE
 LA ENGLISH
 REC Reference Count: 38
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L5 ANSWER 5 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 1
 AN 96:22359 BIOSIS
 DN 98594494
 TI Identification and characterization of a Drosophila nuclear receptor
 with the ability to inhibit the ecdysone response.
 AU Zelhof A C; Yao T-P; Evans R M; McKeown M
 CS Mol. Biol. Virol. Lab., Salk Inst. Biol. Studies, P.O. Box 85800, San
 Diego, CA 92186-5800, USA
 SO Proceedings of the National Academy of Sciences of the United States
 of America 92 (23). 1995. 10477-10481. ISSN: 0027-8424
 LA English

L5 ANSWER 6 OF 49 MEDLINE DUPLICATE 2
 AN 95372400 MEDLINE
 TI Drosophila hormone receptor 38: a second partner for Drosophila USP
 suggests an unexpected role for nuclear receptors of the nerve
 growth factor-induced protein B type.
 AU Sutherland J D; Kozlova T; Tzertzinis G; Kafatos F C
 CS Department of Molecular and Cell Biology, Harvard University,
 Cambridge, MA 02138, USA..
 SO PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES
 OF AMERICA, (1995 Aug 15) 92 (17) 7966-70.
 Journal code: PV3. ISSN: 0027-8424.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals; Cancer Journals
 OS GENBANK-X89246; GENBANK-X89247
 EM 9511

L5 ANSWER 8 OF 49 MEDLINE DUPLICATE 3

AN 96069382 MEDLINE
 TI Seven-up inhibits **ultraspiracle**-based signaling pathways
 in vitro and in vivo.
 AU Zelhof A C; Yao T P; Chen J D; Evans R M; McKeown M
 CS Department of Biology, University of California, San Diego, La Jolla
 92093, USA.
 SO MOLECULAR AND CELLULAR BIOLOGY, (1995 Dec) 15 (12) 6736-45.
 Journal code: NGY. ISSN: 0270-7306.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 9603

L5 ANSWER 9 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
 AN 95:277010 SCISEARCH
 GA The Genuine Article (R) Number: QT121
 TI SEQUENTIAL GENE ACTIVATION BY ECDYSONE IN DROSOPHILA-MELANOGASTER -
 THE HIERARCHICAL EQUIVALENCE OF EARLY AND EARLY-LATE GENES
 AU HUET F; RUIZ C; RICHARDS G (Reprint)
 CS ULP, CNRS, INSERM, INST GENET & BIOL MOLEC & CELLULAIRE, BP 163,
 F-67404 ILLKIRCH GRAFFENSTADEN, FRANCE (Reprint); ULP, CNRS, INSERM,
 INST GENET & BIOL MOLEC & CELLULAIRE, F-67404 ILLKIRCH
 GRAFFENSTADEN, FRANCE; CU STRASBOURG, STRASBOURG, FRANCE
 CYA FRANCE
 SO DEVELOPMENT, (APR 1995) Vol. 121, No. 4, pp. 1195-1204.
 ISSN: 0950-1991.
 DT Article; Journal
 FS LIFE
 LA ENGLISH
 REC Reference Count: 39
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L5 ANSWER 10 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
 AN 96:11607 SCISEARCH
 GA The Genuine Article (R) Number: TK745
 TI FROM EMBRYOGENESIS TO METAMORPHOSIS - THE REGULATION AND FUNCTION OF
 DROSOPHILA NUCLEAR RECEPTOR SUPERFAMILY MEMBERS
 AU THUMMEL C S (Reprint)
 CS UNIV UTAH, HOWARD HUGHES MED INST, ECCLES INST HUMAN GENET, SALT
 LAKE CITY, UT, 84112 (Reprint)
 CYA USA
 SO CELL, (15 DEC 1995) Vol. 83, No. 6, pp. 871-877.
 ISSN: 0092-8674.
 DT General Review; Journal
 FS LIFE
 LA ENGLISH
 REC Reference Count: 56

L5 ANSWER 12 OF 49 MEDLINE
 AN 96133695 MEDLINE

DUPLICATE 4

TI Characterization of an EcR/USP heterodimer target site that mediates
 ecdysone responsiveness of the *Drosophila* Lsp-2 gene.
 AU Antoniewski C; O'Grady M S; Edmondson R G; Lassieur S M; Benes H
 CS Institut Jacques Monod, Centre National de la Recherche Scientifique
 and Universite de Paris 7, France.
 SO MOLECULAR AND GENERAL GENETICS, (1995 Dec 15) 249 (5) 545-56.
 Journal code: NGP. ISSN: 0026-8925.
 CY GERMANY: Germany, Federal Republic of
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 9604

L5 ANSWER 14 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 5
 AN 96:122936 BIOSIS
 DN 98695071
 TI Cloning and development expression of the ecdysone receptor gene from
 the spruce budworm, *Choristoneura fumiferana*.
 AU Kothapalli R; Palli S R; Ladd T R; Sohi S S; Cress D; Dhadialla T S;
 Tzertzinis G; Retnakaran A
 CS Canadian Forest Serv., Saulte-St. Marie, Natl. Resources Canada, 1219
 Queen St. E., Saulte-St. Marie, ON P6A 5M7, Canada
 SO Developmental Genetics 17 (4). 1995. 319-330. ISSN: 0192-253X
 LA English

L5 ANSWER 15 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
 AN 95:346285 BIOSIS
 DN 98360585
 TI The Expression of **ultraspiracle** Gene Product during
 Development of *Drosophila melanogaster*.
 AU Kim S J; Chung K W; Lee C C
 CS Dep. Biol., Seoul Natl. Univ., Seoul 151-742, South Korea
 SO Korean Journal of Zoology 38 (2). 1995. 220-229. ISSN: 0440-2510
 LA English

L5 ANSWER 16 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
 AN 95:279352 BIOSIS
 DN 98293652
 TI Isolation of ECR and RXR sequences from the ixodid tick, *Amblyomma*
americanum using RT-PCR.
 AU Palmer M J; Guo X; Xu Q
 CS Dep. Entomol., Okla. State Univ., Stillwater, OK 74078, USA
 SO Keystone Symposium on Toward the Genetic Manipulation of Insects,
 Tamarron, Colorado, USA, March 17-23, 1995. Journal of Cellular
 Biochemistry Supplement 0 (21A). 1995. 218. ISSN: 0733-1959
 DT Conference
 LA English

L5 ANSWER 17 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 6
 AN 95:279348 BIOSIS
 DN 98293648

TI Cloning and characterization of mosquito **Ultraspiracle**
 (USP), the heterodimer partner of ecdysteroid receptor (EcR).
 AU Kapitskaya M Z; Cress D E; Dhadialla T S; Raikhel A S
 CS Dep. Entomol., Mich. State Univ., East Lansing, MI 48824, USA
 SO Keystone Symposium on Toward the Genetic Manipulation of Insects,
 Tamarron, Colorado, USA, March 17-23, 1995. Journal of Cellular
 Biochemistry Supplement 0 (21A). 1995. 217. ISSN: 0733-1959
 DT Conference
 LA English

L5 ANSWER 20 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
 AN 95:242188 BIOSIS
 DN 98256488
 TI DNA binding of the ecdysteroid receptor-**ultraspiracle**
 heterodimer to natural and synthetic ecdysteroid-response elements.
 AU Elke C; Vogtli M; Lezzi M
 CS Inst. Zellbiol., ETH Honggerberg, CH-8093 Zurich, Switzerland
 SO 27th Annual Meeting of the Swiss Societies for Experimental Biology
 (USGEB/USSBE), Fribourg, Switzerland, March 30-31, 1995. Experientia
 (Basel) 51 (ABSTR.). 1995. A32. ISSN: 0014-4754
 DT Conference
 LA English

L5 ANSWER 21 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
 AN 95:678837 SCISEARCH
 GA The Genuine Article (R) Number: RW774
 TI THE MOLTING HORMONE ECDYSONE IS ABLE TO RECOGNIZE TARGET ELEMENTS
 COMPOSED OF DIRECT REPEATS
 AU DAVINO P P; CRISPI S; CHERBAS L; CHERBAS P; FURIA M (Reprint)
 CS UNIV NAPLES, DIPARTIMENTO GENET BIOL GEN & MOLEC, VIA MEZZOCANNONE
 8, I-80134 NAPLES, ITALY (Reprint); UNIV NAPLES, DIPARTIMENTO GENET
 BIOL GEN & MOLEC, I-80134 NAPLES, ITALY; INDIANA UNIV, DEPT BIOL,
 BLOOMINGTON, IN, 47405
 CYA ITALY; USA
 SO MOLECULAR AND CELLULAR ENDOCRINOLOGY, (30 AUG 1995) Vol. 113, No. 1,
 pp. 1-9.
 ISSN: 0303-7207.
 DT Article; Journal
 FS LIFE
 LA ENGLISH
 REC Reference Count: 29
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L5 ANSWER 22 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
 AN 94:236842 BIOSIS
 DN 97249842
 TI Steroid receptors and other transcription factors in ecdysone
 response.
 AU Segraves W A
 CS Dep. Biology, Yale Univ., New Haven, CT 06511-8112, USA
 SO Bardin, C. W. (Ed.). Recent Progress in Hormone Research, Vol. 49;

1992 Laurentian Hormone Conference. xii+400p. Academic Press, Inc.:
San Diego, California, USA; London, England, UK. 0 (0). 1994.
167-195. ISBN: 0-12-571149-2 ISSN: 0079-9963

DT Book; Conference
LA English

L5 ANSWER 23 OF 49 MEDLINE DUPLICATE 8
AN 94277051 MEDLINE
TI The ecdysone response enhancer of the Fbp1 gene of Drosophila
melanogaster is a direct target for the EcR/USP nuclear receptor.
AU Antoniewski C; Laval M; Dahan A; Lepesant J A
CS Institut Jacques Monod, Centre National de la Recherche
Scientifique, Paris, France..
SO MOLECULAR AND CELLULAR BIOLOGY, (1994 Jul) 14 (7) 4465-74.
Journal code: NGY. ISSN: 0270-7306.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 9409

L5 ANSWER 25 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
AN 94:148939 BIOSIS
DN 97161939
TI Mosaic analysis of **Ultraspiracle**, a Drosophila RXR homolog,
suggests multiple roles in imaginal disc development.
AU Sutherland J D; Shea M; Kafatos F C
CS Dep. Cell. Dev. Biol., Harvard Univ., Cambridge, MA 02138, USA
SO Keystone Symposium on Steroid/Thyroid/Retinoic Acid Super Gene
Family, Taos, New Mexico, USA, February 7-13, 1994. Journal of
Cellular Biochemistry Supplement 0 (18B). 1994. 384. ISSN: 0733-1959
DT Conference
LA English

L5 ANSWER 26 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
AN 94:148903 BIOSIS
DN 97161903
TI The functional and pharmacological ecdysone receptor is the product
of ECR and **ultraspiracle**.
AU Yao T-P; Forman B; Jiang Z; Cherbas L; Chen J-D; McKeown M; Cherbas
P; Evans R M
CS Howard Hughes Med. Inst., Salk Inst. Biol. Studies, La Jolla, CA
92037, USA
SO Keystone Symposium on Steroid/Thyroid/Retinoic Acid Super Gene
Family, Taos, New Mexico, USA, February 7-13, 1994. Journal of
Cellular Biochemistry Supplement 0 (18B). 1994. 375. ISSN: 0733-1959
DT Conference
LA English

L5 ANSWER 27 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
AN 94:148844 BIOSIS

DN 97161844
 TI Enhanced nuclear translocation of the ecdysteroid receptor (EcR) in vertebrate cells is mediated by interaction with **ultraspiracle** (USP).
 AU Vogtli M; Imhof M O; Rusconi S; Lezzi M
 CS Inst. Cell Biol., Swiss Federal Inst. Technol., Zurich, SWI
 SO Keystone Symposium on Steroid/Thyroid/Retinoic Acid Super Gene Family, Taos, New Mexico, USA, February 7-13, 1994. Journal of Cellular Biochemistry Supplement 0 (18B). 1994. 360. ISSN: 0733-1959
 DT Conference
 LA English

L5 ANSWER 29 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
 AN 94:239110 BIOSIS
 DN 97252110

TI **Ultraspiracle** (USP) mediates enhanced nuclear translocation of the ecdysteroid receptor (EcR) in vertebrate cells.
 AU Vogtli M; Imhof M O; Rusconi S; Lezzi M
 CS Inst. Cell Biol., Swiss Federal Inst. Technol., Zurich, SWI
 SO 26th Annual Meeting of the Swiss Societies for Experimental Biology (USGEB/USSBE), Bern, Switzerland, March 17-18, 1994. Experientia (Basel) 50 (ABSTR.). 1994. A22. ISSN: 0014-4754
 DT Conference
 LA English

L5 ANSWER 33 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 12
 AN 93:581645 BIOSIS
 DN 97001015
 TI **Ultraspiracle** and the ecdysone receptor: Relations among the nuclear receptor family from Drosophila to mammals.
 AU Deutsch J
 CS Universite Pierre-et-Marie-Curie, Paris VI, Lab. Biol. Developpement, Inst. Jacques-Monod, 2 place Jussieu, 75251 Paris Cedex 05, FRA
 SO M-S (Medecine Sciences) 9 (6-7). 1993. 701-705. ISSN: 0767-0974
 LA French

L5 ANSWER 34 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 13
 AN 93:356086 BIOSIS
 DN BR45:39511
 TI THE DROSOPHILA RETINOID X RECEPTOR HOMOLOG **ULTRASPIRACLE** REGULATES ECDYSONE RECEPTOR FUNCTION.
 AU ORO A E; YAO T-P; EVANS R M
 CS HOWARD HUGHES MED. INST., LA JOLLA, CA, USA.
 SO ANNUAL MEETING OF THE SOCIETY FOR INVESTIGATIVE DERMATOLOGY, WASHINGTON, D.C., USA, APRIL 28-MAY 1, 1993. J INVEST DERMATOL 100 (4). 1993. 555. CODEN: JIDEAE ISSN: 0022-202X
 DT Conference
 LA English

L5 ANSWER 35 OF 49 MEDLINE DUPLICATE 14
 AN 94067348 MEDLINE

TI Functional ecdysone receptor is the product of EcR and
Ultraspiracle genes.
 AU Yao T P; Forman B M; Jiang Z; Cherbas L; Chen J D; McKeown M;
 Cherbas P; Evans R M
 CS Howard Hughes Medical Institute, Salk Institute for Biological
 Studies, La Jolla, California 92037..
 SO NATURE, (1993 Dec 2) 366 (6454) 476-9.
 Journal code: NSC. ISSN: 0028-0836.
 CY ENGLAND: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals; Cancer Journals
 EM 9403

L5 ANSWER 37 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
 AN 93:229197 SCISEARCH
 GA The Genuine Article (R) Number: KW761
 TI THE DROSOPHILA RETINOID-X RECEPTOR HOMOLOG **ULTRASPIRACLE**
 REGULATES ECDYSONE RECEPTOR FUNCTION
 AU ORO A E (Reprint); YAO T P; EVANS R M
 CS SALK INST BIOL STUDIES, HOWARD HUGHES MED INST, LA JOLLA, CA, 92037;
 SALK INST BIOL STUDIES, GENE EXPRESS LAB, LA JOLLA, CA, 92037
 CYA USA
 SO CLINICAL RESEARCH, (APR 1993) Vol. 41, No. 2, pp. A449.
 ISSN: 0009-9279.
 DT Conference; Journal
 FS LIFE
 LA ENGLISH
 REC No References

L5 ANSWER 39 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 17
 AN 93:240097 BIOSIS
 DN BR44:113297
 TI DROSOPHILA **ULTRASPIRACLE** MODULATES ECDYSONE RESPONSE VIA
 HETERODIMER FORMATION.
 AU YAO T P; SEGRAVES W A; ORO A E; MCKEOWN M; EVANS R M
 CS GENE EXPRESSION LAB., HOWARD HUGHES MED. INST., LA JOLLA, CA
 92186-5800.
 SO KEYSTONE SYMPOSIUM ON TRANSCRIPTION: FACTORS, REGULATION AND
 DIFFERENTIATION, KEYSTONE, COLORADO, USA, JANUARY 17-24, 1993. J CELL
 BIOCHEM SUPPL 0 (17 PART A). 1993. 177. CODEN: JCBSD7
 DT Conference
 LA English

L5 ANSWER 40 OF 49 MEDLINE DUPLICATE 18
 AN 93087556 MEDLINE
 TI DNA binding and heteromerization of the Drosophila transcription
 factor chorion factor 1/**ultraspiracle**.
 AU Christianson A M; King D L; Hatzivassiliou E; Casas J E; Hallenbeck
 P L; Nikodem V M; Mitsialis S A; Kafatos F C
 CS Department of Cellular and Developmental Biology, Harvard

University, Cambridge, MA 02138..
SO PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES
OF AMERICA, (1992 Dec 1) 89 (23) 11503-7.
Journal code: PV3. ISSN: 0027-8424.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 9303

L5 ANSWER 43 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
AN 92:380006 BIOSIS
DN BR43:46956
TI DNA BINDING PROPERTIES OF **ULTRASPIRACLE** THE DROSOPHILA
RETINOID X RECEPTOR HOMOLOGUE.
AU YAO T P; MCKEOWN M; EVANS R M
CS GENE EXPRESSION LAB., SALT INST., LA JOLLA, CALIF. 92186-5800.
SO KEYSTONE SYMPOSIUM ON GROWTH AND DIFFERENTIATION FACTORS IN
VERTEBRATE DEVELOPMENT, KEYSTONE, COLORADO, USA, APRIL 3-10, 1992. J
CELL BIOCHEM SUPPL 0 (16 PART F). 1992. 90. CODEN: JCBSD7
DT Conference
LA English

L5 ANSWER 44 OF 49 MEDLINE DUPLICATE 20
AN 93008244 MEDLINE
TI Drosophila **ultraspiracle** modulates ecdysone receptor
function via heterodimer formation.
AU Yao T P; Segraves W A; Oro A E; McKeown M; Evans R M
CS Howard Hughes Medical Institute, La Jolla, California..
SO CELL, (1992 Oct 2) 71 (1) 63-72.
Journal code: CQ4. ISSN: 0092-8674.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 9301

L5 ANSWER 47 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS
AN 91:176247 BIOSIS
DN BR40:84707
TI RELATIONSHIP BETWEEN THE DROSOPHILA **ULTRASPIRACLE** LOCUS AND
THE VERTEBRATE RETINOID X RECEPTOR.
AU ORO A E; MCKEOWN M; EVANS R M
CS HOWARD HUGHES MED. INST., SALK INST., GENE EXPRESSION LAB., SAN
DIEGO, CALIF. 92186-5800, USA.
SO SYMPOSIUM ON GENE REGULATION AND SIGNALLING IN ENDOCRINE SYSTEMS HELD
AT THE 20TH ANNUAL MEETING OF THE KEYSTONE SYMPOSIA ON MOLECULAR AND
CELLULAR BIOLOGY, STEAMBOAT SPRINGS, COLORADO, USA, JANUARY 19-25,
1991. J CELL BIOCHEM SUPPL 0 (15 PART B). 1991. 276. CODEN: JCBSD7
DT Conference
LA English

L5 ANSWER 48 OF 49 MEDLINE DUPLICATE 22
 AN 90384571 MEDLINE
 TI Relationship between the product of the Drosophila
ultraspiracle locus and the vertebrate retinoid X receptor.
 AU Oro A E; McKeown M; Evans R M
 CS Howard Hughes Medical Institute, La Jolla, California..
 SO NATURE, (1990 Sep 20) 347 (6290) 298-301.
 Journal code: NSC. ISSN: 0028-0836.
 CY ENGLAND: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals; Cancer Journals
 OS GENBANK-X53417
 EM 9012

=> d ab 1-6 8-10 12 14-17 20-23 25-27 29 33-35 37 39 40 43 44 47 48

L5 ANSWER 1 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
 AB We reported the isolation and sequence of a clone encoding a putative ecdysone receptor B1 isoform of the silkworm, *Bombyx mori*. The predicted open reading frame encoded 543 amino acids, with 51%, 95% and 71% identities with the *Drosophila melanogaster* ecdysone receptor B1 isoform in the N terminal A/B region, DNA binding domain (C region) and ligand binding domain (E region), respectively. A single 6.2 kb message for the EcR gene was abundant in wing discs and fat bodies at the onset of metamorphosis. At the same stage, however, no or a tiny amount of mRNA was shown in posterior or middle silk glands, respectively. During the final instar, the mRNA expression in wing discs was maximal on the day of wandering. These data suggest the transcription of the *Bombyx* EcR gene is regulated in tissue specific and stage-specific manner during metamorphosis.

L5 ANSWER 2 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)
 AB Using sequence information derived from the *Drosophila melanogaster* (Dm) ecdysteroid receptor (EcR)- and retinoid X receptor (RXR)-encoding gene homologs, we have isolated cDNA clones corresponding to the DNA-binding domains (DBD) for these two nuclear receptors from the fiddler crab, *Uca pugilator* (Up). Both genes appear to be represented in 1-2 copies in the Up genome, and unlike Dm, contain an intro within the DBD-encoding region. Sequence comparisons to the Dm EcR and RXR homologs indicate 76 and 82% nucleotide identity, respectively, corresponding to 6 and 4 single-amino acid substitutions which primarily cluster in the region of the molecule involved in dimerization. RT-PCR analysis indicates that both the EcR and RXR homologs are expressed during the initial stages of limb regeneration, temporally concomitant with early blastema formation and the secretion of a flexible sac cuticle at the site of limb loss.

L5 ANSWER 3 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)

AB The *Drosophila* ecdysone receptor (DmEcR) is a member of the nuclear receptor superfamily; it functions as an obligate heterodimer with another nuclear receptor, DmUSP. EcR homologs have now been cloned from several other insects. We report here that one such homolog, BmEcR from the commercial silkworm, *Bombyx mori*, is a functional ecdysone receptor. Upon dimerization with BmCF1, the silkworm homolog of DmUSP, BmEcR binds the radiolabeled steroid ligand I-125-iodoponasterone A with $K_d = 1.1$ nM, indistinguishable from that exhibited by DmEcR/DmUSP. BmEcR/BmCF1 forms a specific complex with an ecdysone response element (EcRE) derived from the heat shock protein 27 (hsp27) gene promoter of *Drosophila*; and, as with DmEcR/DmUSP, formation of this complex is stimulated by the presence of 20-hydroxyecdysone. Finally, BmEcR can substitute for DmEcR in an EcR-deficient *Drosophila* tissue culture line, stimulating trans-activation of an ecdysone-inducible reporter gene construct. Thus, BmEcR and BmCF1 are the functional counterparts of DmEcR and DmUSP, respectively and, despite considerable sequence divergence between the *Drosophila* and *Bombyx* proteins, the counterparts are at least qualitatively-functionally equivalent.

L5 ANSWER 4 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)

AB We have designed a rapid cloning and screening strategy to identify new members of the nuclear hormone receptor superfamily that are expressed during the onset of *Drosophila* metamorphosis. Using this approach, we isolated three *Drosophila* genes, designated DHR38, DHR78, and DHR96. All three genes are expressed throughout third-instar larval and prepupal development. DHR38 is the *Drosophila* homolog of NGFI-B and binds specifically to an NGFI-B response element. DHR78 and DHR96 are orphan receptor genes. DHR78 is induced by 20-hydroxyecdysone (20E) in cultured larval organs, and its encoded protein binds to two AGGTCA half-sites arranged as either direct or palindromic repeats. DHR96 is also 20E-inducible, and its encoded protein binds selectively to the hsp27 20E response element. The 20E receptor can bind to each of the sequences recognized by DHR78 and DHR96, indicating that these proteins may compete with the receptor for binding to a common set of target sequences.

L5 ANSWER 5 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 1

AB In a search for retinoid X receptor-like molecules in *Drosophila*, we have identified an additional member of the nuclear receptor superfamily, XR78E/F. In the DNA-binding domain, XR78E/F is closely related to the mammalian receptor TR2, as well as to the nuclear receptors Coup-TF and Seven-up. We demonstrate that XR78E/F binds as a homodimer to direct repeats of the sequence AGGTCA. In transient transfection assays, XR78E/F represses ecdysone signaling in a DNA-binding-dependent fashion. XR78E/F has its highest expression in third-instar larvae and prepupae. These experiments suggest that XR78E/F may play a regulatory role in the transcriptional cascade triggered by the hormone ecdysone in *Drosophila*.

L5 ANSWER 6 OF 49 MEDLINE

DUPLICATE 2

AB In *Drosophila* the response to the hormone ecdysone is mediated in part by **Ultraspiracle** (USP) and ecdysone receptor (EcR), which are members of the nuclear receptor superfamily. Heterodimers of these proteins bind to ecdysone response elements (EcREs) and ecdysone to modulate transcription. Herein we describe *Drosophila* hormone receptor 38 (DHR38) and *Bombyx* hormone receptor 38 (BHR38), two insect homologues of rat nerve growth factor-induced protein B (NGFI-B). Although members of the NGFI-B family are thought to function exclusively as monomers, we show that DHR38 and BHR38 in fact interact strongly with USP and that this interaction is evolutionarily conserved. DHR38 can compete in vitro against EcR for dimerization with USP and consequently disrupt EcR-USP binding to an EcRE. Moreover, transfection experiments in Schneider cells show that DHR38 can affect ecdysone-dependent transcription. This suggests that DHR38 plays a role in the ecdysone response and that more generally NGFI-B type receptors may be able to function as heterodimers with retinoid X receptor type receptors in regulating transcription.

L5 ANSWER 8 OF 49 MEDLINE

DUPLICATE 3

AB Seven-up (Svp), the *Drosophila* homolog of the chicken ovalbumin upstream transcription factor (COUP-TF); **Ultraspiracle** (Usp), the *Drosophila* homolog of the retinoid X receptor; and the ecdysone receptor are all members of the nuclear/steroid receptor superfamily. COUP-TF negatively regulates hormonal signaling involving retinoid X receptor in tissue culture systems. Here we demonstrate that Svp, like COUP-TF, can modulate **Ultraspiracle**-based hormonal signaling both in vitro and in vivo. Transfection assays in CV-1 cells demonstrate that Seven-up can inhibit ecdysone-dependent transactivation by the ecdysone receptor complex, a heterodimeric complex of Usp and ecdysone receptor. This repression depends on the dose of Svp and occurs with two different *Drosophila* ecdysone response elements. Ectopic expression of Svp in vivo induces lethality during early metamorphosis, the time of maximal ecdysone responsiveness. Concomitant overexpression of Usp rescues the larvae from the lethal effects of Svp. DNA binding studies show that Svp can bind to various direct repeats of the sequence AGGTCA but cannot bind to one of the ecdysone response elements used in the transient transfection assays. Our results suggest that Svp-mediated repression can occur by both DNA binding competition and protein-protein interactions.

L5 ANSWER 9 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)

AB Ecdysteroids are key regulators of insect development. In *Drosophila melanogaster* the late larval response to ecdysone is characterised by a precise sequential activation of members of the superfamily of nuclear receptors (DHR3, DHR39, EcR, E75, E78, FTZ-F1, usp). Many of these genes are localised in the polytene chromosome puffs of the salivary gland previously classified as intermoult, early or early-late puff loci, Ashburner et al.

(Ashburner, M., Chihara, C., Meltzer, P. and Richards, G. (1974) Cold Spring Harbour Symp. Quant. Biol. 38, 655-662) proposed a formal model describing interactions between ecdysone, its receptor and the early and late puffs during this ecdysone response. To integrate transcripts from the intermolt and early-late puffs into this model, we have used a micro RT-PCR assay to study their hormonal regulation using salivary gland culture protocols first used in the puffing analyses. We show that transcripts from certain early-late puffs are induced in parallel with the early transcripts and are thus hierarchically equivalent. In vivo the profile of the increase in hormone titre, the sensitivity of different promoters to hormone and the rate of transcript accumulation must contribute to the temporal differences in expression observed between these two classes.

L5 ANSWER 10 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)

L5 ANSWER 12 OF 49 MEDLINE DUPLICATE 4

AB The Larval serum protein-2 gene (Lsp-2) of *Drosophila melanogaster* is uniquely expressed in the fat body tissue from the beginning of the third instar to the end of adult life. Accumulation of the larval Lsp-2 transcript is enhanced by 20-hydroxyecdysone. To study the molecular basis for ecdysone regulated Lsp-2 activity, deletion mutants of the Lsp-2 5'-flanking region were constructed by fusion to either the *Escherichia coli* chloramphenicol acetyltransferase (CAT) gene or to an hsp70-lacZ hybrid gene encoding beta-galactosidase. Constructs transfected into *Drosophila* S2/M3 cells were shown to confer transient ecdysone inducibility on the reporter genes. A single functional ecdysone response element (EcRE) was localized at position -75 relative to the Lsp-2 transcription initiation site. In gel mobility shift assays using fat body nuclear extracts or nuclear receptors synthesized in vitro, a 27-bp sequence harboring the EcRE bound both the *Drosophila* ecdysone receptor and the *Drosophila* retinoid-X homologue, **Ultraspiracle**, in a cooperative manner. Competition experiments indicate that the affinity of the Lsp-2 EcRE for the ecdysone receptor complex is comparable to that of the canonical EcRE of the hsp27 gene and is at least 4-fold greater than that of Fbp1, another fat body-specific *Drosophila* gene. Our results suggest that structural features of this EcRE determine its ability to induce ecdysone responsiveness at a lower ligand concentration and may form the basis for differential hormone responsiveness within the fat body.

L5 ANSWER 14 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 5

AB Degenerate oligonucleotides were designed on the basis of conserved amino acid sequences in the DNA and ligand-binding regions of the members of the steroid hormone receptor superfamily. Using these oligonucleotides in RNA-PCR, a cDNA fragment was isolated from the spruce budworm, *Choristoneura fumiferana*. Comparison of the deduced amino acid sequence of this cDNA fragment with the members of the steroid hormone receptor superfamily suggested that this PCR fragment

is a region of the ecdysone receptor from *C. fumiferana*. Using this cDNA fragment as a probe, 10 clones were isolated from a cDNA library that was constructed using the RNA from 4- and 5-day old embryos of *C. fumiferana*. Two cDNA clones (1.3 and 3 kb) that overlap and show amino acid identity with *Drosophila melanogaster* ecdysone receptor B-1 isoform (DmEcR) were characterized and sequenced. The longest open reading frame had 539 codons and covered the complete EcR coding region. The deduced amino acid sequence of this open reading frame had all five of the regions typical for a steroid hormone nuclear receptor. The C domain, or DNA binding region showed the highest identity with EcR proteins from *D. melanogaster*, *Chironomus tentans*, *Aedes aegypti*, *Manduca sexta*, and *Bombyx mori*. The A/B region, D domain or hinge region, E domain, or ligand binding region also showed significant amino acid similarity with the EcR proteins from the five insects mentioned above. The *C. fumiferana* ecdysteroid receptor (CfEcR) cDNA probe detected a 6.0-kb mRNA that was present throughout the development of *C. fumiferana*. The CfEcR mRNA increases in abundance at the time of the ecdysteroid peak during the molting phase in the embryonic, larval and pupal stages but remains low during the intermolt period. In the 6th instar larvae, the 6-kb CfEcR mRNA was detected in the epidermis, fat body, and midgut and maximum expression was observed during the prepupal peak of ecdysteroids in the hemolymph. CfEcR mRNA was induced in ecdysone treated CF-203 cells as well as in the epidermis and midgut of larvae that were fed the nonsteroidal ecdysteroid agonist, RH-5992. The induction occurred within an hour and reached maximum levels around 3 hr, after which it decreased to the basal level by 6 hr. In vitro transcription and translation of the CfEcR cDNA yielded a 67-Kda protein that bound to the ecdysone response element (EcRE) as a heterodimer, along with the **ultraspiracle** protein.

L5 ANSWER 15 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS

AB **ultraspiracle** (usp) gene product (Usp) is a member of the superfamily of steroid hormone receptors in *Drosophila melanogaster* which mediate the hormone action by heteromerization with ecdysone receptor (EcR). Based on the genetic and molecular characterization of usp, it has been proposed that Usp functions in at least three significant developmental pathways: embryogenesis, eye morphogenesis, and female reproduction. In this study, the expression patterns of Usp were investigated by immunohistochemistry in individual tissues from different developmental stages of *Drosophila*. Usp is localized in the nucleus with ubiquitous distribution throughout development. Usp expression is detected throughout embryogenesis. Usp is expressed in imaginal and larval tissues from late third instar larva. The expression pattern of Usp is overlapped by those of EcR. Also Usp is expressed in differentiating adult reproductive organs. This result suggests that Usp is not a transcriptional regulatory factor modulating hormonal response during development, but also play some roles in female and male reproduction of *Drosophila*.

L5 ANSWER 16 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS

L5 ANSWER 17 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 6

L5 ANSWER 20 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS

L5 ANSWER 21 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)

AB In *Drosophila melanogaster*, three temporally distinct ecdysone-responsive puff sets, the so-called intermolt, early and late puffs, have been described on the salivary gland polytene chromosomes. We have analyzed in detail a DNA segment of the 3C polytene region, from which originates one of the most prominent intermolt puffs, with the aim of identifying ecdysone response elements (EcREs). Here we report that two putative EcREs of identical sequence are located at this puff site. Interestingly, these elements display a novel structural feature, being composed of directly repeated half-sites. Our results show that the Ecr/USP heterodimer known to constitute the ecdysone functional receptor complex is able to bind to and transactivate through target elements composed of directly repeated half-sites. In addition, we show that these elements are also able to bind efficiently USP alone, suggesting that USP and Ecr/USP could compete for their binding to DNA.

L5 ANSWER 22 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS

L5 ANSWER 23 OF 49 MEDLINE DUPLICATE 8

AB The transcription of the *Drosophila melanogaster* Fbp1 gene is induced by the steroid hormone 20-hydroxyecdysone and restricted to the late-third-instar fat body tissue. In a previous study we showed that the -68 to -138 region relative to the transcription start site acts as an ecdysone-dependent third-instar fat body-specific enhancer in a transgenic assay. Here we report that seven nucleoprotein complexes are formed in vitro on this enhancer when a nuclear extract from late-third-instar fat body is used in a gel shift assay. Accurate mapping of the binding sites of the complexes revealed a remarkably symmetrical organization. Using specific antibodies, one of the complexes was identified as a heterodimer consisting of the ecdysone receptor (Ecr) and **Ultraspiracle** (USP) proteins. The binding site of the heterodimer as defined by mutagenesis and methylation interference experiments bears strong sequence similarity to the canonical hsp27 ecdysone response element, including an imperfect palindromic structure. The two elements diverge at three positions in both half-sites, indicating that the structure of an active Ecr/USP binding site allows considerable sequence variations. In vivo footprinting experiments using ligation-mediated PCR and wild-type or ecdysteroid-deficient larvae show that occupancy of the Fbp1 Ecr/USP binding site and adjacent region is dependent on a high concentration of ecdysteroids. These results provide strong evidence for a direct role of the Ecr/USP heterodimer in driving gene expression in response to changes of the ecdysteroid titer during *Drosophila*

larval development.

L5 ANSWER 25 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS

L5 ANSWER 26 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS

L5 ANSWER 27 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS

L5 ANSWER 29 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS

L5 ANSWER 33 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 12

L5 ANSWER 34 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 13

L5 ANSWER 35 OF 49 MEDLINE DUPLICATE 14

AB Although the biological activity of the insect moulting hormone ecdysone, is manifested through a hormonally regulated transcriptional cascade associated with chromosomal puffing, a direct association of the receptor with the puff has yet to be established. The cloned ecdysone receptor (EcR) is by itself incapable of high-affinity DNA binding or transcriptional activation. Rather, these activities are dependent on heterodimer formation with **Ultraspiracle** (USP) the insect homologue of vertebrate retinoid X receptor. Here we report that native EcR and USP are co-localized on ecdysone-responsive loci of polytene chromosomes. Moreover, we show that natural ecdysones selectively promote physical association between EcR and USP, and conversely, that high-affinity hormone binding requires both EcR and USP. Replacement of USP with retinoid X receptor produces heterodimers with distinct pharmacological and functional properties. These results redefine the ecdysone receptor as a dynamic complex whose activity may be altered by combinatorial interactions among subunits and ligand.

L5 ANSWER 37 OF 49 SCISEARCH COPYRIGHT 1996 ISI (R)

L5 ANSWER 39 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 17

L5 ANSWER 40 OF 49 MEDLINE DUPLICATE 18

AB The Drosophila chorion factor 1/**ultraspiracle** (CF1/USP) transcription factor, a homologue of the retinoid X receptor, is a developmentally important member of the family of nuclear (steroid) hormone receptors. Using newly developed monoclonal antibodies and a full-length bacterially produced protein, we have studied in detail the in vitro DNA-binding properties of this factor and aspects of its distribution in vivo. During oogenesis, CF1/USP is present both in germline cells and in the somatic follicular epithelium. We have determined the optimal binding site of partially purified bacterially produced CF1/USP by an in vitro selection procedure and also have characterized its binding to the follicular-specific chorion s15 promoter. In vitro this bacterially produced factor is

unusual in binding to a single element ("half-site"); simultaneous but noncoordinate binding to a second half-site is possible if these repeated elements are organized in direct orientation and spaced adequately. However, the factor interacts synergistically with several other nuclear hormone receptors: notably, it can form in vitro heteromers with mammalian thyroid and retinoic acid receptors, binding to two half-sites that are organized in either direct or inverted orientation. In vivo the factor most probably functions as a heterodimer, but its partner(s) remains to be determined.

L5 ANSWER 43 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS

L5 ANSWER 44 OF 49 MEDLINE DUPLICATE 20
AB The vertebrate retinoid X receptor (RXR) has been implicated in the regulation of multiple hormonal signaling pathways through the formation of heteromeric receptor complexes that bind DNA with high affinity. We now demonstrate that **ultraspiracle** (usp), a Drosophila RXR homolog, can substitute for RXR in stimulating the DNA binding of receptors for retinoic acid, T3, vitamin D, and peroxisome proliferator activators. These observations led to the search and ultimate identification of the ecdysone receptor (Ecr) as a Drosophila partner of usp. Together, usp and Ecr bind DNA in a highly cooperative fashion. Cotransfection of both Ecr and usp expression vectors is required to render cultured mammalian cells ecdysone responsive. These results implicate usp as an integral component of the functional Ecr. By demonstrating that receptor heterodimer formation precedes the divergence of vertebrate and invertebrate lineages, these data underscore a central role for RXR and its homolog usp in the evolution and control of the nuclear receptor-based endocrine system.

L5 ANSWER 47 OF 49 BIOSIS COPYRIGHT 1996 BIOSIS

L5 ANSWER 48 OF 49 MEDLINE DUPLICATE 22
AB The vitamin A derivative, retinoic acid, can regulate morphogenesis and differentiation in vertebrates. Two different subfamilies of the steroid receptor superfamily of transcription factors, the retinoic acid receptors and the retinoid X receptor, mediate the effects of retinoic acid. As part of an analysis of the hormonal control of development, we have examined the Drosophila genome for retinoic acid receptor homologues. Here we describe one such gene, XR2C, which encodes a product with structural similarity to the human retinoic acid-responsive transcription factor, retinoid X receptor. This receptor-like protein is encoded by **ultraspiracle** (usp), a locus required both maternally and zygotically for pattern formation. The discovery that the usp product is a retinoid X receptor homologue suggests that similar chemical cues underlie morphogenic signalling in vertebrate and invertebrate systems.

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COST IN U.S. DOLLARS

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SESSION WILL BE HELD FOR 60 MINUTES